

## SARL NEWS SUNDAY 15 SEPTEMBER 2013

You are listening to ZS6SRL, the official radio station of the South African Radio League, the national body for amateur radio in South Africa. The SARL broadcasts a news bulletin every Sunday at 08:15 CAT in Afrikaans and at 08:30 CAT in English. To listen to a web stream, visit [www.sarl.org.za](http://www.sarl.org.za), click on 'Amateur Radio Today' and follow the links for details. For audio via Echolink, connect to ZS0JPL-R.

You can download this bulletin and previous ones from [www.sarl.org.za](http://www.sarl.org.za) and also subscribe there to receive future bulletins by e-mail.

Your newsreader this morning is (name and call sign), on 145,725 MHz from Pretoria, with a relay on 7,066 MHz SSB. (Other news readers change to suit).

### IN THE NEWS TODAY:

#### RAE REGISTRATION CLOSES ON MONDAY 16 SEPTEMBER 2013

#### WESTERN CAPE RTA BOOKING OPENS

#### VOYAGER 1 EMBARKS ON HISTORIC JOURNEY INTO INTERSTELLAR SPACE AND IT STILL COMMUNICATES WITH EARTH

You are listening to ZS6SRL. Stay tuned for more details on these and other important and interesting items.

#### RAE REGISTRATION CLOSES ON MONDAY 16 SEPTEMBER 2013

The closing date for registration for the Radio Amateur Examination to be held on 17 October 2013 is on 16 September 2013. Entry forms can be mailed to [rae@sarl.org.za](mailto:rae@sarl.org.za). Please make sure that you have selected three possible call signs which are available and that all the required documents are included. Full details can be found on [www.sarl.org.za](http://www.sarl.org.za). The examination will take place on 17 October from 19:00 to 22:00 at various centres around South Africa.

If you are not sure or need any help please contact Gideon Jannasch by email to [rae@sarl.org.za](mailto:rae@sarl.org.za).

#### WESTERN CAPE RTA BOOKING OPENS

Booking for the SARL Radio Technology in Action Symposium to be held in Bellville is now open. Full details, a booking form and programme can be found on [www.sarl.org.za](http://www.sarl.org.za), click on the link in the news section on the home page.

#### VOYAGER 1 EMBARKS ON HISTORIC JOURNEY INTO INTERSTELLAR SPACE AND IT STILL COMMUNICATES WITH EARTH

NASA's Voyager 1 spacecraft is officially the first human-made object to venture into interstellar space. The 36-year-old probe is about 19 billion kilometres from our sun.

New, and unexpected data, indicate Voyager 1 has been traveling for about one year through plasma, or ionized gas, present in the space between stars.

Voyager is in a transitional region immediately outside the solar bubble, where some effects from our sun are still evident.

“Now that we have new, key data, we believe this is mankind’s historic leap into interstellar space,” said Ed Stone, Voyager project scientist based at the California Institute of Technology, Pasadena. “The Voyager team needed time to analyse those observations and make sense of them. But we can now answer the question we’ve all been asking – ‘Are we there yet?’ Yes, we are.”

Voyager 1 first detected the increased pressure of interstellar space on the heliosphere, the bubble of charged particles surrounding the sun that reaches far beyond the outer planets, in 2004. Scientists then ramped up their search for evidence of the spacecraft’s interstellar arrival, knowing the data analysis and interpretation could take months or years.

Voyager 1 does not have a working plasma sensor, so scientists needed a different way to measure the spacecraft’s plasma environment to make a definitive determination of its location. A coronal mass ejection, or a massive burst of solar wind and magnetic fields, that erupted from the sun in March 2012 provided scientists the data they needed. When this unexpected gift from the sun eventually arrived at Voyager 1’s location 13 months later, in April 2013, the plasma around the spacecraft began to vibrate like a violin string. On April 9, Voyager 1’s plasma wave instrument detected the movement. The pitch of the oscillations helped scientists determine the density of the plasma. The particular oscillations meant the spacecraft was bathed in plasma more than 40 times denser than what they had encountered in the outer layer of the heliosphere. Density of this sort is to be expected in interstellar space.

Voyager 1 and its twin, Voyager 2, were launched 16 days apart in 1977. Both spacecraft flew by Jupiter and Saturn. Voyager 2 also flew by Uranus and Neptune. Voyager 2, launched before Voyager 1, is the longest continuously operated spacecraft. It is about 15 billion kilometres away from our sun.

Voyager mission controllers still talk to or receive data from Voyager 1 and Voyager 2 every day, though the emitted signals are currently very dim, at about 23 watts – the power of a refrigerator light bulb. By the time the signals get to Earth, they are a fraction of a billion-billionth of a watt. Data from Voyager 1’s instruments are transmitted to Earth typically at 160 bits per second, and captured by 34- and 70 meter NASA Deep Space Network (DSN) stations. Traveling at the speed of light, a signal from Voyager 1 takes about 17 hours to travel to Earth.

#### ESKOM YOUNG SCIENTIST EKSPLO

The Eskom Young Scientist Expo will take place over the period 25 to 28 September 2013 at the Birchwood Hotel and Conference Centre Exhibition Hall, Boksburg.

The SARL are still in need of young amateurs (under 25) to man the field station with the focus on marketing Amateur Radio under the youth that will visit the

Expo.

The program will be as follows: Wednesday 26 September: Set up trailer, equipment, antennas and displays. Thursday 27 September: Exhibition Day 07:00 - 19:00 Friday 28 September: Exhibition day 07:00 - 17:00 Breakdown 17:00.

Other Amateurs are also welcome to assist with the manning of the field station. Members interested in assisting please contact ZS3TG, Gerhard Coetzee(082 576 6296) or ZS6YH Mitchell Mynhardt (082 773 1980) before 12:00 on Tuesday 25 September 2013.

#### THE INDESTRUCTABLE TYPE BLF578XR LDMOS FET

The LDMOS (Laterally Diffused Metal Oxide Semiconductor) FET type BLF578XR (Extremely Rugged) transistor was developed by NXP for use as an RF power amplifier in broadcast and industrial applications. It is rated at 1 400 Watt output, 50 Volts DC with a gain of 23,5 dB and an efficiency of 69%; it can survive a 125:1 or higher VSWR; in other words you could weld with it. Now 50 MHz, 144 MHz and 432 MHz high power RF amplifiers should be within reach of us radio amateurs without the fear of destroying an expensive device, and perhaps LDMOS FETs can now be considered in the future like tubes (valves). This device will definitely be needed when we are allocated higher power on VHF and UHF, and hopefully the current price of 230 Euros (R3 100) per semiconductor will come down in time.

#### NEXT VHF/UHF COMPETITION

The next leg of the SARL VHF/UHF competition is just around the corner, it takes place over the week end of the 21st September.

Of the radio clubs decided to co-operate and erect a VHF/UHF field station during that week end. The focus is then to promote “the” activity and promote it under new amateurs and any one interested rather than to partake in a competition. With an interactive week end we work together to make a station available for any interested radioamateur to make contacts using his own call sign and to gain experience.

Only a control log will be submitted to the SARL. It will thus be a platform to meet each other and to get to know equipment and competition techniques better.

The station will be situated at a very safe camping site approximately 35 km East of Pretoria.

Other clubs are encouraged to undertake similar actions. Any interested people are welcome to come and see what will be done.

For more detail, contact any of the following persons: ZS6PA, Pieter Human at 082 565 608 or email to [qsobox@gmail.com](mailto:qsobox@gmail.com) or ZS6PJH, Pierre Holtzhausen at 082 575 5799 or email to [zs6pjh@telkomsa.net](mailto:zs6pjh@telkomsa.net).

CQ HOU KOERS

CQ Hou Koers, the Voortrekkers' national amateur radio communications day, takes place on 19 October 2013. Children would be able to operate a station and make contact with other Voortrekker and Scout stations all over South Africa and Namibia.

Radio amateurs, please offer your assistance to local Voortrekker groups.

This year a station will be active from the Women's memorial in Bloemfontein. The Women's memorial celebrates its centenary during the weekend of 18 to 20 October 2013.

Enquiries regarding CQ Hou Koers may be sent to [cq@orionvoortrekkers.co.za](mailto:cq@orionvoortrekkers.co.za).

#### PROPAGATION REPORT

Hannes Coetzee, ZS6BZP, reports that the solar activity is expected to remain at low levels with the Earth side of the sun being very quiet.

If you want to do your own frequency predictions, the expected effective sunspot number for the week will be around 38.

All the bands from 20 to 12 m will provide lots of DX fun with 20 m providing the best openings with 15 m not far behind. 10 m openings will be few and far between.

Please visit the new website <http://spaceweather.sansa.org.za> for further information.

DIARY OF EVENTS 16 September Tomorrow, last day to enrol for the RAE; email to [rae@sarl.org.za](mailto:rae@sarl.org.za). 25 September Last day for members interested to assist at the Eskom Young Scientist Expo to contact ZS3TG, Gerhard Coetzee at 082 576 6296 or ZS6YH, Mitchell Mynhardt at 082 773 1980. 25 to 28 September - Eskom Young Scientist Expo at the Birchwood Hotel and Conference Centre Exhibition Hall, Boksburg. 17 October Radio Amateur Examination.

SARL News invites clubs and individuals to submit news items of interest to radio amateurs and short-wave listeners. Submit news items - if possible in both English and Afrikaans to [www.sarl.org.za/newsinbox.asp](http://www.sarl.org.za/newsinbox.asp), not later than the Thursday preceding the bulletin date.

The SARL invites you to listen to Amateur Radio Today every Sunday morning at 10:00 CAT on 145,750 MHz in the Pretoria area, with relays on 7 082, 7 205, and 17 660 kHz. There is also a podcast by ZS6RO. For a web-stream and Echolink by ZS6FCS, visit [www.sarl.org.za](http://www.sarl.org.za), click on 'Amateur Radio Today', go down the green column and click on 'LISTEN ON THE WEB'. A repeat transmission can be heard on Mondays at 16:30 UTC on 3 230 kHz. The website also lists various other retransmissions. Reception reports, comments and suggestions are invited. Send an email to [artoday@sarl.org.za](mailto:artoday@sarl.org.za). Sentech sponsors the transmissions on the non-amateur frequencies.

You have listened to a bulletin of the South African Radio League compiled and edited by George Honiball, ZS6NE.

Thank you for listening, 73.

/EX